REMARKS

As a result of the objection to the specification, Applicants have changed the nomenclature for the structure defined by reference numerals 28 and 30 to "DC paths."

Applicants traverse the objection to the specification with regard to the comment:

> Further, it is also not clear how the "path" 20 and 30 can be "DC" because each of them has a voltage signal that transistions/swings between ground and supply Vdd which is not a DC voltage.

Firstly, supply terminal Vdd is, in fact, a DC voltage. Paragraph 18 of the application as filed indicates terminal 16 is a positive DC power supply terminal at a potential of +1.0. Further, it is very common for DC paths to carry voltages having transistions/swings between ground and a DC voltage. See the enclosed copies of pages 327-329 of Vol. 5, of the *McGraw, Hill Encyclopedia of Science and Technology* (1992), which support the foregoing statement. The sentence bridging pages 327 and 328 says "These amplifiers (DC amplifiers) will also amplify alternating current (AC) signals." The waveforms in the right column of page 329 and the entry enttled "Direct current" on that page discuss the transitions swings of DC. The enclosed product brochure of Intertechnology Inc., obtained from the Internet on January 4, 2005, at URL http://www.intertechnology.com/ectron/extron_751_precision_differential_DC_amplifier.html indicates a commercial DC amplifier is capable of carrying voltages between DC and 100 kHz. Based on the foregoing, paths 28 and 30 of the specification can be and, in fact, are DC paths. The objection to "DC path" and "DC connections" because it is not clear what is meant by "DC connections" is therefore incorrect. If the Examiner persists in this objection, he is requested to provide a basis for his position that overcomes the evidence submitted by Applicants.

Applicants have amended the claims to overcome the objections to claims 1, 3, 7-12, 14, 16-18, 20 and 21, even though the objection to the words "the circuitry" is incorrect. There was no need to change the words "the circuitry" to -- the pulse shaping circuitry --. The attention of the Examiner is directed to M.P.E.P. §2173.005(e) and *Ex parte Porta*, 25 USPQ2d 1144, 1145 (Bd. Pat. App. & Int. 1992). In the *Ex parte Porta* decision, the Board held "controlled stream of fluid" provided an antecedent basis for "the controlled fluid." Applicants have amended the claims merely to satisfy the Examiner since there is an objection to the claims, rather than a rejection.

To overcome the rejection of claims 1, 3, 7-12, 14, 16-18, 20 and 21 on the basis of obviousness-type double patenting, Applicants submit herewith a Terminal Disclaimer with regard to U.S. Patents 6,753,708, 6,759,880 and co-pending U.S. application 10/777,902. However, the Office Action incorrectly says all claim limitations of the foregoing patents and the copending application anticipate all the claim limitations of the present application. The rejection correctly states numerous times the double patenting rejection is an obviousness-type double patenting rejection. The Examiner is requested to correct the record with regard to the word "anticipate" in item 4, page 3 of the Office Action.

The claims have been amended to rectify most of the criticisms thereof under 35 USC §112, second paragraph. In addition, Applicants have carefully reviewed the claims and made further clarifying changes in them.

Applicants, however, traverse the requirement to remove the requirements for "DC path" from claim 7, and the requirements to remove "DC connected" from claims 14 and 20. The terminology "DC path" and "DC connected" has a meaning well known to those of ordinary skill in the art. A DC path or a DC connection is a path capable of carrying a DC voltage. Such a DC

path or connection is also capable of carrying AC; see the previous discussion about the objection to DC path. However, an AC path or connection is incapable of carrying DC. The Examiner's suggestion to change "DC path" and "DC connection" to -- direct connected -- is inadvisable and actually renders the claims indefinite.

Applicants traverse the rejection of claims 1, 3, 7-11, 20 and 21 as being anticipated by Love (U.S. Patent 5,068,553). Independent claim 1, upon which claims 3, 7, 8, 9, 10, 11 and 12 depend, distinguishes, as filed, over Love by requiring the capacitor that is connected across the gate electrode of one of the transistors and a first of the power supply terminals to have a conductivity type opposite to the conductivity type of said one of said transistors. The Examiner interprets capacitor 80 of Love to read on the capacitor of claim 1. In consequence, the first power supply terminal of claim 1 must be read on the ground terminal of the Love circuit. In addition, the "said one of said transistors" must be read on the Love n-channel transistor 88.

The specification of the Love patent does not indicate whether the MOSFET capacitor 80 is an n-channel or p-channel device. Consequently, the written specification of the Love patent is not anticipatory with regard to the requirement for the capacitor to be a field effect device having a conductivity type opposite to the conductivity type of said one of said transistors. The figures of the Love patent suggest MOSFET capacitor 80 and transistor 88 are of the same, rather than opposite, conductivity type. The gate electrode of capacitor 80 does not include a circle, while p-channel transistors 68 and 86 both have circles at their gate electrodes. There are no circles at the gate electrodes of n-channel transistors 70 and 88. Hence, it would appear MOSFET capacitor 80 is also an n-channel device, and therefore does not have a conductivity type opposite from the conductivity type of n-channel capacitor 88. This conclusion is supported by the description of Figs. 5 and 6 of Rapp (U.S. Patent 5,280,420) which indicates n-channel

capacitors and transistors have gate electrodes without circles.

The Office Action does not discuss the limitation of the capacitor comprising a field effect device having a conductivity type opposite to the conductivity type of said one of said transistors. Based on the foregoing factors, the Office Action has not established a basis for the anticipation rejection of claim 1.

Claims 3 and 7-11 are allowable for at least the reasons advanced for claim 1.

Applicants also traverse the rejection of claims 20 and 21 as being anticipated by Love. Independent claim 20, as previously presented, distinguished over Love by requiring (1) the first and second transistors to be of the same conductivity type, (2) the resistive element to be connected between the source drain path of the third transistor and the output terminal of the inverter, and (3) specific connections of the power supply terminals to the various components. Because the Office Action indicates resistor 72 of Love is the resistive element of claim 20, p-channel transistor 68 must be the third transistor of claim 20. n-channel transistors 88 and 70 of Love must be construed as the first and second transistors of claim 20. This is because claim 20 requires the second transistor to be of the same conductivity type as the first transistor and the third transistor to be of a conductivity type opposite from the first and second transistors. The resistive element is also required to supply current from the first power supply terminal to the control electrode of the first transistor and the capacitor that is required to be connected between the control element and the first power supply terminal. However, in Love, capacitor 80 is connected between the gate of n-channel transistor 88 and ground, and resistor 72 supplies current from ungrounded power supply terminal Vdd to capacitor 80 and the gates of transistors 88 and 86. Transistor 88 cannot be the first transistor of the claim because transistor 88 has a conductivity type opposite from that of transistor 68, which is the second transistor.

Consequently, the anticipation rejection of claim 20 based on Love is wrong.

Applicants traverse the anticipation rejection of claims 14 and 16 based on Hamasaki et al. Claim 14, upon which claim 16 depends, requires the first and second capacitors to be respectively connected between the first control electrode of the first transistor and the first power supply terminal and the second control electrode of the second transistor and the second power supply terminal. Capacitors Cn and Cp of Hamasaki et al., that are respectively connected to the control electrodes (i.e., gates) of first and second transistors 50 and 60, are both connected to ground. Hence, the requirement for the first and second capacitors to be connected to first and second power supply terminals is not found in Hamasaki et al. Based on the foregoing, the anticipation rejection of claims 14 and 16, based on Hamasaki et al. is wrong. The rejection of claims 14 and 16 based on Hamasaki et al. does not mention the foregoing distinguishing requirement of claim 14.

Claim 16 is allowable, at least, for the reasons discussed in connection with claim 14.

Applicants traverse the rejection of claims 1, 3, 7-12, 17 and 18 as being obvious as a result of Hamasaki et al. in view of Rapp (U.S., Patent 5,280,420). The Examiner recognizes that Hamasaki et al. is deficient with regard to the limitations of claims 1, 3, 7-12, 17 and 18 because Hamasaki et al. does not disclose a first capacitor comprising a field effect device having a conductivity type opposite to the conductivity type of the first transistor. The Examiner relies on Rapp to disclose a capacitor formed by using an NMOS transistor having its source and drain connected together. The Examiner cites column 7, lines 10-16, and lines 61-63, of Rapp. Column 7, lines 6-16 of Rapp discusses diodes D7, D8, D9 and Dx and diodes D11, D12, D13 and Dy of Figure 3 of Rapp and indicates these capacitors are "preferably implemented with diode-connected MOS transistors." This portion of Rapp also states that capacitors C8, C9 and

Cx and capacitors C12, C13 and Cy and capacitors C16, C17 and Cz are "preferably implemented with capacitor-connected MOS transistors." Column 7, lines 61-63, of Rapp, discusses MOS transistors MN9 and MN10 and Figure 6 as being n-channel MOS transistors. The foregoing portions of Rapp do not provide a basis for holding that it would have been obvious to replace capacitor Cn of Hamasaki et al. with an MOS device having a conductivity type opposite from the conductivity type of transistor 50. The same is true with regard to the conductivity types of capacitors Ct and transistor 60 of Hamasaki et al. There is simply no disclosure in Rapp of a capacitor connected between the gate electrode of a transistor having a first conductivity type and a power supply terminal and a capacitor formed by an MOS device having a conductivity type opposite from the transistor.

The discussion of Figures 5 and 6 of Rapp indicates the MOS capacitors are of the same conductivity type as the MOS transistors. MOS capacitors MN7, MN9 and MN10 are all n-channel devices, as are transistors MN6 and MN11-MN14. In addition, capacitors MN7, MN9 and MN10 are connected between a signal terminal and a control electrode of a transistor, rather than between a power supply terminal and a control electrode. Hence, there is no disclosure in Rapp of a structure meeting the aspect of claims 1 and 14 not disclosed by Hamasaki et al. If the Examiner repeats this rejection, he is requested to provide greater detail as to why Rapp discloses the foregoing structure.

Throughout the Office Action, *In re Swinehart*, 169 USPQ 226 (CCPA 1971) and *In Schreiber*, 44 USPQ2d 1429 (Fed. Cir. 1997) are cited for the proposition that if the structure of a claim is fully met, the functional limitations of the claim are also met. This statement is not germane to the claims of the present application because the claims (as discussed *supra)* of the present application define structure that is not found in the applied art.

Further, the *Swinehart* and *Schreiber* decisions do not stand for the above proposition. In *Swinehart*, functional language, relating to the opaque nature of the structure to infrared, was the distinguishing feature of the considered claim over the prior art. The CCPA overruled the PTO rejection, despite the fact that the considered claim distinguished over the prior art only by this functional limitation. Hence, the *Swinehart* decision essentially has a ruling that is completely opposite from the position set forth in the Office Action. In *Schreiber*, the Federal Circuit ruled the claimed structure was inherently included in the reference. There is no discussion about inherency in the present Office Action. Further, the Office Action does not indicate what are the alleged functional limitations of the claims. As a result, the *Swinehart* and *Schreiber* decisions are not applicable to the claims of the present application.

To provide Applicants with the protection to which are deemed entitled, Applicants add claims 22, 23, 24, 25 and 26, respectively dependent on claims 14, 20, 12, 11, 12, 11 and 26. The newly added claims define the connections of the resistive elements and resistor in greater detail and in a manner not disclosed or made obvious by the art of record.

In view of the foregoing amendments and remarks, favorable consideration and allowance are respectfully requested and deemed in order.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 08-2025 and please credit any excess fees to such deposit account.

Respectfully submitted,

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